

PATENT

Attorney Docket No. 400396/Y.P. LEE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:

CHANG et al.

Art Unit: 1745

Application No. 09/416,270

Examiner: T. Dove

Filed: October 12, 1999

For: LITHIUM POLYMER BATTERY

PENDING CLAIMS AFTER ENTRY OF PRELIMINARY AMENDMENT

23. A method of making a lithium polymer battery comprising:

- preparing a positive active material slurry by preparing a first solution by dissolving a binder in a solvent, adding a plasticizer, and adding a lithium salt as a positive active material, and adding carbon black to the first solution to produce a first mixture;
- stirring the first mixture to increase viscosity of the first mixture;
- applying the first mixture to opposite sides of an aluminum foil, the aluminum foil including a plurality of through holes extending through the aluminum foil, as a positive collector, to form a positive plate;
- preparing a negative active material slurry by preparing a second solution by dissolving a binder in a solvent and adding a plasticizer, and adding carbon black to the second solution to produce a second mixture;
- stirring the second mixture to increase viscosity of the second mixture;
- applying the negative active material slurry to opposite sides of a copper foil, the copper foil being free of holes, as a negative collector, to form a negative plate;
- laminating the positive plate and the negative plate on opposite sides of a separator;
- and
- extracting the plasticizer from the positive plate and the negative plate.

24. The method of claim 23 wherein applying the positive active material slurry to the positive collector comprises directly applying the slurry to the positive collector.

25. The method according to claim 23 including applying the positive active material slurry to the positive collector by forming sheets of the positive active material slurry and applying the sheets of the positive active material slurry to the positive collector.

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26. The method of claim 23 wherein applying the negative active material slurry to the negative collector comprises directly applying the slurry to the negative collector.

27. The method according to claim 23 including applying the negative active material slurry to the negative collector by forming sheets of the negative active material slurry and applying the sheets of the negative active material slurry to the negative collector.

28. The method according to claim 23 wherein the binder is polyvinylidene fluoride.

29. The method of claim 23 wherein the first and second solvents are chosen from the group consisting of N-methyl-2-pyrrolidone and acetone.

30. A lithium polymer battery made by the method of claim 23.

31. A lithium polymer battery made by the method of claim 24.

32. A lithium polymer battery made by the method of claim 25.

33. A lithium polymer battery made by the method of claim 26.

34. A lithium polymer battery made by the method of claim 27.